



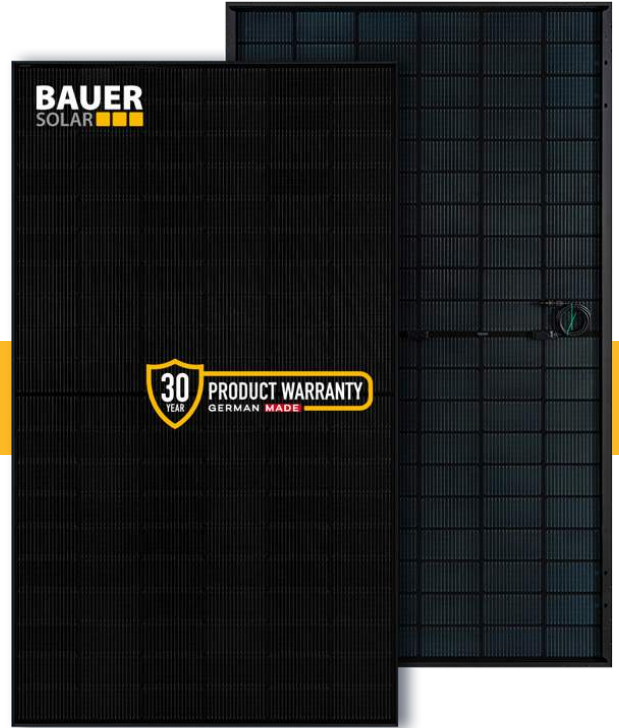
TOPCON N-TYPE M10

BAUER SOLARTECHNIK

# SUPERBLACK

BS-120M10NHBB-GG 465 - 475 W

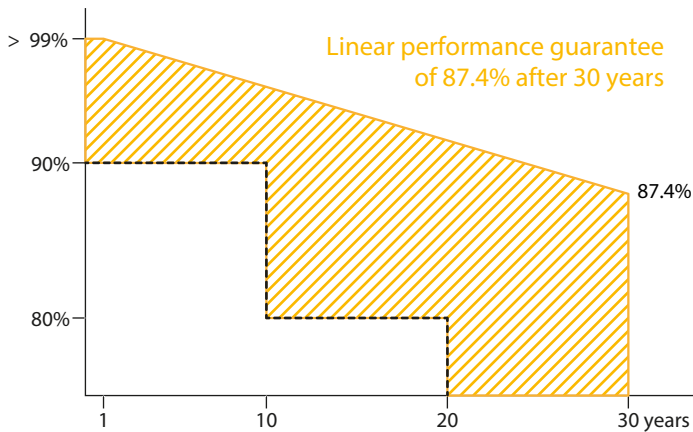
BIFACIAL GLASS-GLASS HALF-CELL MODULE



engineered & designed in  
**GERMANY**



BAUER guarantees a minimum performance value of 87.4% after 30 years for the **SUPERBLACK** glass-glass solar modules.



### FIRE CLASS A

Maximum fire protection through double glazing according to the highest security requirements



### CERTIFICATION

Constant in-house quality controls - certified several times over by accredited inspection bodies



### GRADE "A" N-TYPE BIFACIAL HALF-CELLS

Up to 30% increase in yield through bifacial cells active on both sides and a transparent backside. Only GRADE "A" half-cells are used in the production of all BAUER solar modules and only the blackest are selected.



### GERMAN GUARANTOR

If necessary, it is guaranteed that a German company takes over any claim settlements



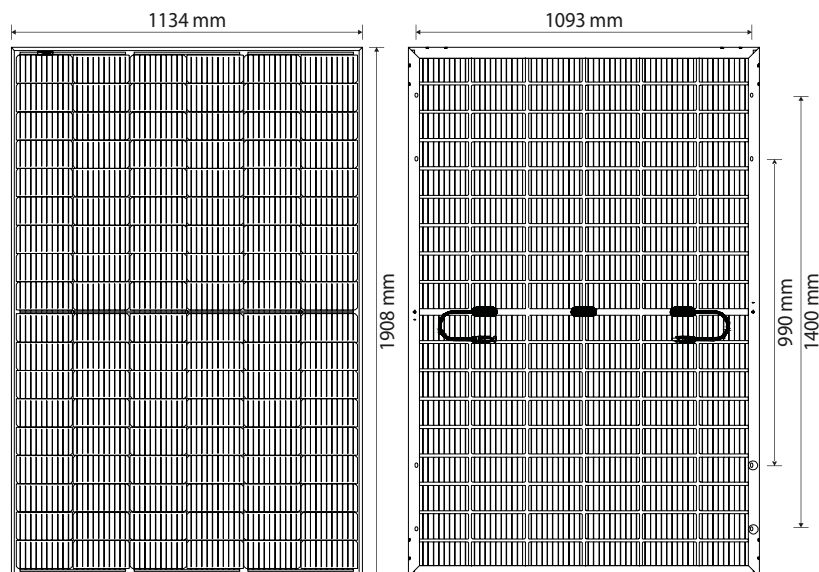
### WARRANTY & GUARANTEE

30 year warranty and a linear performance guarantee over a period of 30 years

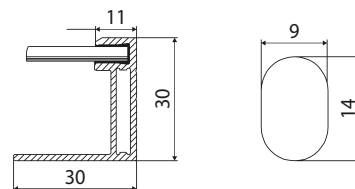


### REINSURANCE COVERAGE

BAUER is re-insured with Munich RE for 15 years of the product warranty & 30 years of the performance guarantee



### BAUER SOLARTECHNIK SUPERBLACK BS-120M10NHBB-GG 465 - 475 W



#### WARRANTIES<sup>1</sup>

- 30 years product warranty
- 30 years performance guarantee

#### PHYSICAL SPECIFICATIONS

|                    |  |
|--------------------|--|
| Module dimensions  | 1908 x 1134 x 30 mm                            |
| Weight             | 26.7 kg  |
| Frame              | Black anodized aluminum profile                |
| Frontside          | AR-coating Semi-toughened glass, 2 mm          |
| Embedding material | EVA  |
| Backside           | Black-glazed & Semi-toughened glass, 2 mm      |
| Solar cells        | 120 monocrystalline N-type bifacial half-cells |
| Bifaciality        | 80 % ± 10 %                                    |
| Junction box(es)   | IP68, 3 bypass diodes                          |
| Cable & connector  | 1x4 mm <sup>2</sup> , 500 mm, MC4 compatible   |

#### OPERATING CONDITIONS

|                       |                     |
|-----------------------|---------------------|
| Operating temperature | -40 to 85°C         |
| Static load           | 5400 Pa (snow/wind) |
| Hail                  | Ø 25 mm at 23 m/s   |

#### CERTIFICATION

CSA, IEC 61215, IEC 61730, fire class A IEC 61730-2 (UL790)

#### PACKAGING

|                               |        |
|-------------------------------|--------|
| Modules per pallet            | 35     |
| Pallets/Modules per container | 24/840 |

#### ELECTRICAL CHARACTERISTICS<sup>2</sup>

|   |                                    | BS-465-120M10NHBB-GG | BS-470-120M10NHBB-GG | BS-475-120M10NHBB-GG |
|---|------------------------------------|----------------------|----------------------|----------------------|
| Maximum power                               | P <sub>max</sub> (W)               | 465                  | 470                  | 475                  |
| Power output tolerance                      | P <sub>max</sub> (%)               | 0 ~ +3               | 0 ~ +3               | 0 ~ +3               |
| Open circuit voltage                        | V <sub>oc</sub> (V)                | 42,21                | 42,37                | 42,53                |
| Short circuit current                       | I <sub>sc</sub> (A)                | 14,08                | 14,15                | 14,23                |
| Voltage at maximum power                    | V <sub>mpp</sub> (V)               | 34,92                | 35,07                | 35,23                |
| Current at maximum power                    | I <sub>mpp</sub> (A)               | 13,32                | 13,41                | 13,49                |
| Module efficiency                           | η <sub>m</sub> (%)                 | 21,49                | 21,72                | 21,95                |
| Bifaciality performance increase*           | 10 % P <sub>mpp</sub> (W)          | 511,5 (+46,5)        | 517 (+47)            | 522,5 (+47,5)        |
|   | 20 % P <sub>mpp</sub> (W)          | 558 (+93)            | 564 (+94)            | 570 (+95)            |
|   | 30 % P <sub>mpp</sub> (W)          | 604,5 (+139,5)       | 611 (+141)           | 617,5 (+142,5)       |
| Nominal operating cell temperature          | NOCT (°C)                          | 45 +/- 2             |                      |                      |
| Temperature coefficient of Voc              | T <sub>k</sub> (Voc)               | -0,26 %/°C           |                      |                      |
| Temperature coefficient of Isc              | T <sub>k</sub> (Isc)               | +0,046 %/°C          |                      |                      |
| Temperature coefficient of P <sub>mpp</sub> | T <sub>k</sub> (P <sub>mpp</sub> ) | -0,30 %/°C           |                      |                      |
| Maximum system voltage DC (TÜV)             | (V)                                | 1500                 |                      |                      |
| Maximum series fuse rating                  | (A)                                | 30                   |                      |                      |

<sup>1</sup>Nominal value is specified in the written warranty conditions. A possible light-induced degradation in performance is not taken into account.

<sup>2</sup>Values under Standard Test Conditions (STC): air pressure 1.5 AM, irradiance 1000 W/m<sup>2</sup>, cell temperature 25°C. STC measuring tolerance: ±3 % (P<sub>max</sub>), ±10 % (V<sub>max</sub>, I<sub>mpp</sub>, V<sub>OC</sub>, I<sub>SC</sub>). The beneficiary under the reinsurance policy is solely Bauer Solar GmbH. Please contact us to get information on how this insurance coverage benefits you as a customer.

Note: please read the safety instructions and installation manual before using this product.  
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